



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

App. No. : 09/780,306
Applicant : Daniel Pompei Cedrone
Filed : 02/09/2001
TC/A.U. : 3676
Examiner : Alison K. Pickard
Docket No. : 1246.1
Customer No. : 021176
For : GRAVITY HINGE

Confirmation No: 6764

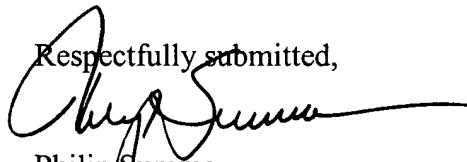
April 5, 2005

Mail Stop Appeal Brief - Patents
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**TRANSMITTAL OF APPEAL BRIEF
(PATENT APPLICATION – 37 C.F.R. § 1.192)**

1. Transmitted herewith, in triplicate, is the APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on February 9, 2005.
2. This application is filed on behalf of Poly-Tech Industrial, LLC, a small entity.
3. Pursuant to 37 C.F.R. § 41.20(b)(2), the fee for filing the Appeal Brief is \$250. Any additional fee or refund may be charged to Deposit Account 50-0332.

Respectfully submitted,


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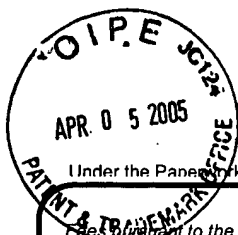
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April 5, 2005


Philip Summa, Reg. No. 31,573



PTO/SB/17 (12-04v2)

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FEE TRANSMITTAL

For FY 2005

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 250.00

Complete if Known

Application Number	09/780,306
Filing Date	02/09/2001
First Named Inventor	Daniel Pompei Cedrone
Examiner Name	Alison K. Pickard
Art Unit	3676
Attorney Docket No.	1246.1

METHOD OF PAYMENT (check all that apply)☐ Check ☒ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____☒ Deposit Account Deposit Account Number: 50-0332 Deposit Account Name: Summa & Allan, P. A.

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below☐ Charge fee(s) indicated below, except for the filing fee☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17☐ Credit any overpayments**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180
Total Claims		
- 20 or HP = _____ x _____ = _____		
HP = highest number of total claims paid for, if greater than 20.		
Indep. Claims		
- 3 or HP = _____ x _____ = _____		
HP = highest number of independent claims paid for, if greater than 3.		

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
_____ - 100 = _____	_____ / 50 = _____	(round up to a whole number) x _____	_____	_____

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Filing a Brief in Support of an Appeal under 37CFR 41.20(b)(2)**Fees Paid (\$)**\$250.00**SUBMITTED BY**

Signature		Registration No. (Attorney/Agent) 44,513	Telephone 704-945-6703
Name (Print/Type)	Philip Summa		Date 31,573

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPEAL BRIEF

On February 9, 2005, Applicant filed a Notice of Appeal from the Primary Examiner to the Board Of Patent Appeals and Interferences in accordance with 37 C.F.R. § 1.191. The Notice of Appeal was filed in response to the Final Office Action mailed August 10, 2004. In accordance with 37 C.F.R. § 1.192(a), Applicant timely submits this Appeal Brief.

Real Party in Interest

The real party in interest is Poly-Tech Industrial, LLC, a corporation organized under the laws of North Carolina and located in Huntersville, North Carolina ("Poly-Tech"). Poly-Tech is the real party in interest by virtue of an assignment from the inventor to Poly-Tech submitted with the application and now recorded at Reel 011557, Frame 0208.

Statement of Related Appeals and Interferences

There are currently no related appeals or interferences.

Status of Claims

Claims 1-5, 7, 10-16, 33, and 36 are pending and stand rejected. Claims 1-5, 7, 10-16, 33, and 36 are the subject of this appeal. The claims as pending on appeal are attached hereto as Exhibit 1.

Status of Amendments

No amendments were entered subsequent to the Examiner's final rejection in the most recent Office Action dated August 10, 2004.

Summary of Invention

The claimed invention relates to safety gates that close automatically via the action of gravity—known to those skilled in the art has “gravity gates.” The present invention incorporates the cylindrical hinge as depicted in Figure 1 below:

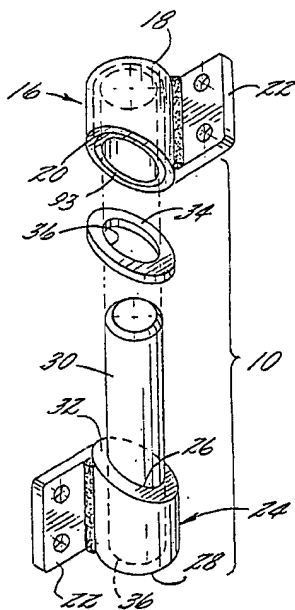


Fig. 1

Known gravity gates typically employ a cylindrical hinge consisting of an upper portion and a lower portion, wherein the upper portion rotates about an oblique junction upon application of a rotational force. As the upper portion rotates, the two portions separate due to the oblique nature of the junction. Accordingly, the upper portion "rises," thereby storing potential energy that causes the upper portion to "fall" (*i.e.*, rotate) back to a neutral position when the rotational force is terminated.

A primary problem associated with known gravity gates, and common to all devices that employ moving parts, is friction. In many instances the rotating portions of known hinges are made of metal and are in direct contact with one another, thus leading to friction and premature failure of the hinge. Attempts to solve frictional problems associated with rotating metal portions include the application of an external lubricant such as grease. Unfortunately, grease is messy and transitory, thereby leading to frequent maintenance.

More recent designs of gravity gates incorporate polymers in an attempt to reduce friction and weight of the hinge. Although polymer cams may reduce friction, polymer cams are far more susceptible to torsional failures than metallic cams.

The claimed device eliminates or reduces many of the problems identified above with respect to known gravity gates. Further, devices according to the present invention are efficiently manufactured and demonstrate superior commercial success as compared to other gravity gate devices.

Referring to the numerically identified elements in Figure 1 above, the gravity hinge of the present application includes an upper cylindrical knuckle (16), a lower cylindrical knuckle (24), an oblique polymeric bushing (34) positioned between the upper and lower cylindrical knuckles, and a spindle (30) received by the bushing (34) and at least one of the knuckles.

The upper and lower knuckles (16, 24) each include a first terminating surface (18 and 26, respectively) and an opposing second terminating surface (20 and 28, respectively). The second terminating surface (20) of the upper knuckle (16) is oblique to the axis of the upper knuckle. The first terminating surface (26) of the lower knuckle (24) is oblique to the axis of the lower knuckle. Preferably, the oblique angle of the first terminating surface (26) of the lower knuckle (24) is approximately the same as the second terminating surface (20) of the upper knuckle (16).

The spindle (30) is received by at least one of the knuckles and establishes rotating communication between the upper and lower knuckles (16, 24). The upper and lower knuckles (16, 24) are situated such that the second terminating surface (20) of the upper knuckle (16) is opposed to the first terminating surface (26) of the lower knuckle (24).

The polymeric bushing (34) surrounds the spindle (30) and separates the upper and lower knuckles (16, 24). Advantageously, the polymeric bushing (34) has a lower coefficient of friction with respect to the oblique surfaces (20, 26) of the upper and lower knuckles (16, 24) than the respective surfaces have for each other.

The Issue

Under 35 U.S.C. § 103(a) setting forth the requirements for non-obviousness, does a claimed invention satisfy the statutory requirements for patentability when the only two references cited by the Examiner teach away from the claimed invention?

Grouping of the Claims

The claims at issue, Claims 1-5, 7, 10-16, 33, and 36, do not stand or fall together for the purpose of this appeal. The claims are considered to be in two groups.

Group 1 includes Claims 1-5, 7, and 10-16. Claim 1 is the representative claim for Group 1 and covers a gravity hinge.

Group 2 includes Claim 33 and 36. Claim 33 is the representative claim for Group 2 and covers a gravity gate as incorporating the gravity hinge of Group 1. Applicant notes that Claim 36 improperly depends from previously cancelled Claim 34. Applicant will delete Claim 36 at the appropriate time.

The Office's Rejection

The Office rejects all claims under 35 U.S.C. § 103(a) as being obvious over U.S. Pat. No. 4,697,306 to Rhodes in view of U.S. Pat No. 3,733,650 to Douglas. The Office maintains that the combination of cited references discloses all of the elements of the claimed invention, thereby rendering the claims obvious.

The Office's rejection can be summarized as follows.

1. Rhodes discloses a gravity hinge consisting of an upper cylindrical knuckle having a first surface, an opposing second surface, and an oblique surface. Rhodes further discloses a lower cylindrical knuckle having a first surface, a second surface, and an oblique surface. Rhodes also discloses a spindle, but fails to disclose the bushing and sleeve. August 10, 2004 Office Action, p. 2, para. 2.

2. Douglas discloses a "gravity" hinge having an upper knuckle, a lower knuckle, a spindle, and a polymeric sleeve positioned between the two knuckles. August 10, 2004 Office Action, p. 2, para. 2.

3. Therefore, the Office contends that, "...it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the hinge of Rhodes with the sleeve/bushing taught by Douglas to reduce friction, reduce wear, and provide smooth rotation." August 10, 2004 Office Action, p. 2, para. 2.

The Office has Failed to Establish a Prima Facie Case of Obviousness

Applicant respectfully submits that the combination cited by the Office fails to satisfy the requirements for a *prima facie* case of obviousness under *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966) and its progeny. Obviousness cannot be established by combining pieces of prior art absent some teaching, suggestion, or incentive supporting the combination. *In re Geiger*, 815 F.2d 686, 688, 1 USPQ2d 1276, 1278 (Fed. Cir. 1987) (reversing the finding of obviousness because the standard for obviousness was not met where the application was based on a specific combination of existing techniques where many possible combinations existed).

Applicant asserts that there exists no suggestion or motivation to combine the cited references in the manner described by the Office. Specifically, Douglas teaches away from the claimed invention.

Douglas Provides No Motivation for Making the Substitution Suggested by the Examiner and in Fact Teaches Away from Gravity Hinges

Douglas teaches away from the use of lift-off (*i.e.*, gravity) hinges. Specifically, as described herein, Douglas emphasizes several disadvantages of lift-off or "rising and falling" hinges. According to Douglas, the disadvantages of such hinges can be avoided by using the structure that he discloses and claims; namely, the cam member or insert (12) with the oblique surface (15) as depicted in Figure 2 below:

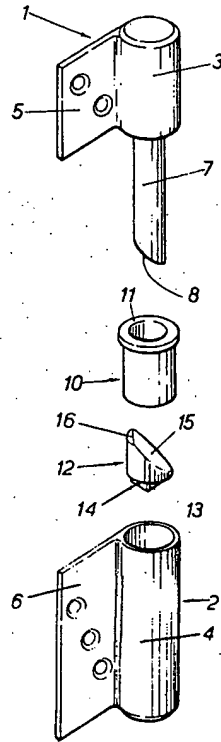


Fig. 2

As illustrated above, the adjacent end faces of the upper and lower barrel members (1, 2) of Douglas are intentionally parallel—in contrast to the chamfered and inclined end faces or terminating surfaces (20, 26) of the upper and lower knuckles (16, 24) of the claimed invention (*see* Fig. 1). Applicant first argued this deficiency with respect to the Douglas reference during the Office Interview of July 16, 2003.

As discussed at the interview, because Douglas seeks to preserve barrel members with parallel faces, Douglas teaches away from the claimed invention and thus cannot be properly brought to bear in a combination. Therefore, the combination of Rhodes in view of Douglas must be removed as against the pending claims. Applicant calls the Office's

attention to column 1, lines 13-31 of the Douglas patent, which teaches that hinges with chamfered and inclined edges are disadvantageous and should be avoided.

Specifically, Douglas identifies the disadvantages of rising and falling lift-off hinges, namely, the duplication of production tools required to manufacture both the lift-off hinges and the parallel movement hinges. Douglas, column 1, lines 18-22. This duplication, Douglas asserts, necessarily leads to increased tooling costs, increased manufacturing costs, increased initial expenditure by retailers, and increased requirement for storage space. Douglas, column 1, lines 22-26.

Finally, Douglas affirms the following object of his invention:

...to overcome, or minimize, the foregoing disadvantages by enabling a lift-off hinge to be converted quickly and easily from a rising and falling hinge to a parallel movement hinge and vice versa.

Douglas, column 1, lines 27-31 (emphasis added).

Stated differently, an object of Douglas's invention is to overcome the stated disadvantages of lift-off hinges by using the structure he discloses and claims; namely, a single insert (12) with an oblique surface (15) (*see* Fig. 2). In contrast, the claimed invention discloses and claims two opposing knuckles (16, 24) having chamfered and inclined terminating surfaces (20, 26).

Thus, Douglas's goal is to produce a hinge that avoids such inclined knuckles. Accordingly, given that Douglas teaches away from the use of the inclined knuckles that are recited in Claim 1 of the present application, the person of ordinary skill in the art would not logically choose Douglas to combine with Rhodes.

When Douglas is properly considered as teaching the disadvantages of lift-off hinges, Douglas no longer remains a valid reference that can be favorably combined with lift-off hinges because Douglas explicitly teaches the person of ordinary skill in the art to avoid such combinations (*i.e.*, inclined knuckles and lift-off hinges).

In summary, a prior art reference must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F. 2d 1540, 220 USPQ 303 (Fed. Cir. 1983) *cert. denied*, 469 U.S. 851 (1984). Applicant must again insist upon applying the well-understood maxim that if the Office wishes to appeal to the teachings of a reference, the reference and its teachings must be evaluated in their entirety, and the Office is not entitled to selectively choose those portions of the reference that favors the Office's position while ignoring those portions of the reference that teach away from the Office's position.

Therefore, the Office's use of Douglas in any combination with a lift-off structure is inconsistent with Douglas itself and such combinations must collapse under Douglas's own teaching.

Other Indicia of Nonobviousness

Although not the exclusive arbiter of non-obviousness, evidence of commercial success is a proper factor to be considered by the Office. To that end, Applicant has submitted on April 30, 2004, a Declaration under Rule 132 (37 C.F.R. § 1.132) from named inventor Daniel P. Cedrone setting forth evidence of the commercial success of the claimed invention.

Although Mr. Cedrone is the named inventor and certainly has an interest in obtaining patent protection, he also brings 23 years of experience to this market and is the principal (President) of Poly-Tech Industrial, LLC. Furthermore, Poly-Tech remains the sole supplier of the invention to date. Accordingly, Applicant submits that Mr. Cedrone's declaration provides an appropriate evaluation of the commercial success of the invention regardless of his status as named inventor.

As set forth in Mr. Cedrone's declaration, since 2000, the claimed invention has created a market worth hundreds of thousands of dollars per year. Applicant respectfully

points out that within nine months of its introduction, over 800 of the hinges had been sold at a price point of about \$150 per hinge.

This commercial success is an objective indication of the non-obviousness of the claimed invention. As stated by the Federal Circuit, “the commercial response to an invention is significant to determinations of obviousness, and is entitled to fair weight.” *Demaco Corp. v. F. Von Langsdorff Licensing, Ltd.*, 851 F.2d 1387, 1391, 859 U.S.P.Q.2d 1222 (Fed. Cir. 1988) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 35-36, 148 USPQ 459, 474, 86 S. Ct. 684 (1966)). In *Demaco*, the Federal Circuit reversed the district court’s finding that certain claims in U.S. Patent No. 4,128,357 were invalid for obviousness under 35 U.S.C. § 103. In analyzing the evidentiary burden on the patentee to demonstrate commercial success, the Court stated:

A patentee is not required to prove as part of its *prima facie* case that the commercial success of the patented invention is *not* due to factors other than the patented invention. It is sufficient to show that the commercial success was of the patented invention itself.

Demaco, 851 F.2d at 1394.

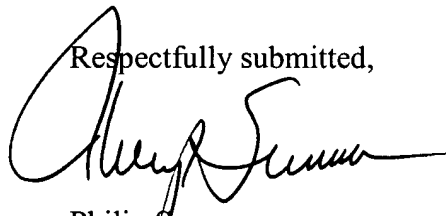
In this case, the commercial success demonstrated above resulted from the unique and non-obviousness nature of the claimed invention.

As further evidence of commercial success, the self-closing gate and hinge of the present invention has now been included in the McMaster-Carr catalog (www.mcmaster.com) which is a premier source of mechanical equipment in the United States and global markets. With respect to the Applicant, McMaster is an unrelated third party that is free of any obligation to carry Applicant’s invention. Thus, the decision to do so is McMaster’s rather than Applicant’s. Stated differently, the acceptance of the claimed invention in the McMaster catalog is an objective indication of its success on the part of a party (McMaster) that has no particular interest in the patentability of the invention.

Conclusion

No motivation exists to combine the references in the manner suggested by the Office. In fact, the Douglas reference specifically teaches away from the claimed invention (*i.e.*, gravity hinges with inclined edges). Thus, the Office has failed to establish a *prima facie* case for obviousness and the rejection must be overturned.

Respectfully submitted,



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Exhibit 1

1. (Previously presented) A low friction gravity hinge consisting essentially of:

- an upper cylindrical knuckle having a first terminating surface and an opposing second terminating surface, said second terminating surface being oblique to the axis of said upper knuckle across its entire surface;
- a lower cylindrical knuckle having a first terminating surface and an opposing second terminating surface
- said first terminating surface of said lower cylindrical knuckle being oblique to the axis of said lower knuckle and at the same angle across its entire oblique surface as said second surface of said upper knuckle;
- an oblique polymeric bushing between said upper and lower knuckles, said bushing having substantially the same oblique angle as said second terminating surface of said upper knuckle and said first terminating surface of said lower knuckle;
- a spindle received by at least one of said knuckles and said bushing for establishing rotating communication between said upper and lower knuckles;
- said polymeric bushing having a lower coefficient of friction with respect to said respective oblique surfaces of said upper and lower knuckles than said respective surfaces have for each other and wherein said bushing and said knuckles form a continuous cylinder when said knuckles are in a resting position; and
- a cylindrical polymeric sleeve within said upper knuckle between said knuckle and said spindle for reducing rotational friction therebetween.

2. (Original) A gravity hinge according to claim 1 wherein said upper cylindrical knuckle is tubular and said spindle extends from said first terminating surface of said lower cylindrical knuckle and is received in said upper tubular knuckle.

3. (Original) A gravity hinge according to claim 2 wherein said spindle is integral to said lower cylindrical knuckle.

4. (Original) A gravity hinge according to claim 2 wherein said lower cylindrical knuckle has a recess for receiving said spindle.

5. (Original) A gravity hinge according to claim 1 wherein said lower cylindrical knuckle is tubular and said spindle extends from said second terminating surface of said upper knuckle and is received in said lower tubular knuckle.

6. (Cancelled)

7. (Original) A gravity hinge according to claim 5 wherein said upper knuckle is tubular and said spindle traverses the length of said upper knuckle and is received in said lower tubular knuckle.

8-9. (Cancelled)

10. (Previously presented) A gravity hinge according to claim 1 wherein said bushing and said sleeve form an integral unit.

11. (Original) A gravity hinge according to claim 10 in which at least one of said cylindrical knuckles possesses an opening sufficient to receive both said spindle and said sleeve.

12. (Original) A gravity hinge according to claim 1 wherein at least one of said knuckles is metallic.

13. (Original) A gravity hinge according to claim 1 wherein at least one of said knuckles is ceramic.

14. (Original) A gravity hinge according to claim 1 wherein at least one of said knuckles is formed of a polymer.

15. (Original) A gravity hinge according to claim 1 further comprising a mounting flange attached to at least one of said knuckles.

16. (Original) A gravity gate comprising the gravity hinge according to claim 1.

17-28. (Cancelled)

29-32. (Cancelled)

33. (Previously presented) A gravity gate consisting essentially of:
a static structure selected from the group consisting of walls and posts;
a lower cylindrical knuckle attached to said static structure, said lower knuckle having a first terminating surface oblique to the axis of said lower knuckle across its entire surface and an opposing second terminating surface;
an upper cylindrical knuckle having a first terminating surface and an opposing second terminating surface, said second terminating surface being oblique to the axis of said upper knuckle across its entire surface;
a spindle for rotatably engaging said upper knuckle with said lower knuckle such that said oblique terminating surfaces of each knuckle are proximate to each other;
an oblique polymer bushing surrounding said spindle and separating said upper and lower knuckles, said bushing having a lower coefficient of friction with respect to said respective oblique surfaces of said upper and lower knuckles than said respective

surfaces have for each other, wherein said bushing and said knuckles form a continuous cylinder when said knuckles are in a resting position;

a frame member attached to said upper knuckle; and

a cylindrical polymeric sleeve within said upper knuckle between said knuckle and said spindle for reducing rotational friction therebetween.

34. (Cancelled)

35. (Cancelled)

36. (Original) A fence comprising the gravity gate of claim 34.

37-39 (Cancelled)